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10/596,008

05/25/2006

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EXAMINER

DOLLINGER, MICHAEL M

ART UNIT

PAPER NUMBER

1796

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DELIVERY MODE

11/04/2009

PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

| | | | |
|------------------------------|--------------------------------------|------------------------------------|--|
| Office Action Summary | Application No. 10/596,008 | Applicant(s) OHNO ET AL. | |
| | Examiner MIKE DOLLINGER | Art Unit 1796 | |

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 09/04/2009.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1,3,4 and 6-10 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1,3,4 and 6-10 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☒ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413) |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | Paper No(s)/Mail Date. _____ |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08) | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| Paper No(s)/Mail Date <u>10/27/2009</u> . | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

Claim Rejections - 35 USC § 102

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

1. Claims 1, 3, 4 and 7-9 are rejected under 35 U.S.C. 102(b) as being anticipated by Moriya et al (US 5,821,315).
2. Moriya discloses compositions useful as paints comprising a vinyl copolymer comprised of lactone modified acrylic monomer and other monomer and a blocked polyisocyanate [abstract]. Examples of the vinyl copolymer include A3 which comprises PURAKUSERU (PLACCEL) FM-2 which is the reaction product of 2 mol ϵ -caprolactone and 1 mol of 2-hydroxyethyl methacrylate, 2-hydroxyethyl methacrylate and other acrylate monomers [Table 2]. A3 has a hydroxy group value of 140 mgKOH/g [Table 2]. A3 has molecular weight of 10,000 [Table 2] so it clearly has more than three hydroxyl groups. Henceforth, the vinyl polymer reads on claimed components (A) and (C). The paints include a blocked isocyanurate of hexamethylene diisocyanate or isophorone diisocyanate [Table 3] which reads on claimed component (B). A steel sheet [column 10 line 65] was coated with the inventive paints which were hardened (cured) by heating at 140°C for 40 minutes [column 11 lines 4-10]. This heat curing causes the isocyanates to become unblocked, so these polyisocyanates will read on the "liberated isocyanate groups" of claims 8 and 9.

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3. Regarding claim 3, the caprolactone modified 2-hydroxyethyl methacrylate A3 may alternatively be a lactone modified 2-hydroxyethyl acrylate or other hydroxyalkyl acrylate [column 3 lines 18-20].

4. Regarding claim 4, the vinyl copolymer A3 contains 3.9% by weight of acrylic acid [Table 2] which may alternatively be cyclohexyl (meth)acrylate, styrene or styrene derivatives [column 3 lines 38-45].

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

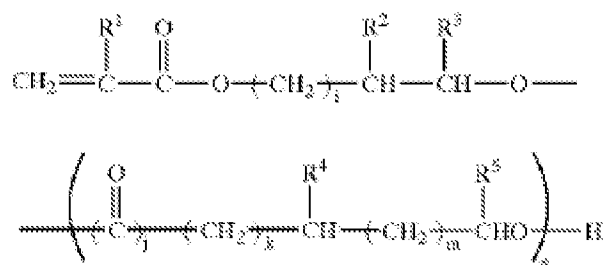
5. Claims 6 and 10 are rejected under 35 U.S.C. 103(a) as being unpatentable over Moriya et al (US 5,821,315).

6. Moriya does not disclose a vinyl copolymer that reads on claim 1 with an acid number of 3 mg KOH/g or less. However, Moriya does disclose that the acid value of the vinyl copolymer should be 0-40 mgKOH/g [column 4 lines 20-23], which fully encompasses the claimed range. In the case where the claimed ranges "overlap or lie inside ranges disclosed by the prior art" a *prima facie* case of obviousness exists. *In re Wertheim*, 541 F.2d 257, 191 USPQ 90 (CCPA 1976); *In re Woodruff*, 919 F.2d 1575, 16 USPQ2d 1934 (Fed. Cir. 1990), *In re Geisler*, 116 F.3d 1465, 1469-71, 43 USPQ2d 1362, 1365-66 (Fed. Cir. 1997).

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7. Claims 1, 3, 4 and 7-9 are rejected under 35 U.S.C. 103(a) as being unpatentable over Hayakawa et al (WO 96/34064, hereinafter all references are made to the English language equivalent US 6,689,839 B1).

8. Hayakawa et al discloses a thermoset paint composition comprising (a) a fluorine containing copolymer of fluoro-olefin, hydroxyl group containing vinyl based monomer and other vinyl based monomer having a hydroxy group value between 60 and 150 mgKOH/g [column 2 lines 34-39], (b) a vinyl based (co)polymer comprising a monomer represented by the general formula 1:



wherein $n = 0-10$ and the (co)polymer has a hydroxy group value between 60 and 150 mgKOH/g [column 2 lines 40-46; 55-60], and (d) a blocked polyisocyanate compounds [column 2 lines 49-50]. The hydroxyl group containing vinyl based monomer of component (a) may be lactone modified 2-hydroxyalkyl (meth)acrylate, e.g. ϵ -caprolactone modified 2-hydroxyethyl (meth)acrylate [column 4 lines 3-10]. The other vinyl based monomer of component (a) may be 2-hydroxyethyl (meth)acrylate [column 4 line 40] and monomers with a cyclic backbone such as cycloalkyl ester of (meth)acrylic acid [column 4 line 34], styrene [column 4 line 41], cyclohexyl vinyl ether [column 4 line 44], and combinations of two or more [column 4 line 46]. The monomer of component (b) represented by formula 1 is also a lactone modified vinyl based monomer such as

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modified 2-hydroxyalkyl (meth)acrylate, e.g. ϵ -caprolactone modified 2-hydroxyethyl (meth)acrylate [column 5 lines 54-63]. Other vinyl based monomers in component (b) include 2-hydroxyethyl (meth)acrylate [column 6 line 7] and monomer with a cyclic backbone including cycloalkyl ester of (meth)acrylic acid [column 6 line 1], styrene [column 6 line 7], and combinations of two or more [column 6 line 10-12]. Components (a) and (b) each read on both the claimed (meth)acrylic resin (A) of claim 1 and the lactone polyol (C) of claim 5.

9. Since $n = 0-10$ in formula 1, there are between 0 and 10 caprolactone repetitive units in the lactone modified hydroxyalkyl (meth)acrylate. This range completely encompasses the claimed range of 2-3 lactone units per modified hydroxyalkyl (meth)acrylate. In the case where the claimed ranges "overlap or lie inside ranges disclosed by the prior art" a *prima facie* case of obviousness exists. *In re Wertheim*, 541 F.2d 257, 191 USPQ 90 (CCPA 1976); *In re Woodruff*, 919 F.2d 1575, 16 USPQ2d 1934 (Fed. Cir. 1990), *In re Geisler*, 116 F.3d 1465, 1469-71, 43 USPQ2d 1362, 1365-66 (Fed. Cir. 1997).

10. Regarding claim 3, the disclosure of caprolactone modified 2-hydroxyethyl (meth)acrylate is considered the explicit disclosure of caprolactone modified 2-hydroethyl methacrylate and caprolactone modified 2-hydroxyethyl acrylate.

11. Regarding claim 4, example polymers AC-2 and AC-3 have cyclohexyl methacrylate in the monomer mixture in an amount of 10 weight percent and 5 weight percent, respectively [Table 2].

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12. Regarding claims 8 and 9, the blocked polyisocyanate compounds are capable of forming urethane bonds [column 3 lines 9-10; 23-24]. In order to form urethane bonds the isocyanate groups must be "liberated" from the blocking agent. Additionally, curing of the coating composition occurs at elevated temperature for an extended period of time [column 8 lines 59-63] indicating a process of "liberating" the isocyanate functional groups from the blocking agents.

13. If Applicant argues that the claimed embodiments are not disclosed with sufficient specificity and that examiner is picking and choosing with improper hindsight, Examiner notes that mere fact that a reference suggests a multitude of possible combinations does not in and of itself make any one of those combinations less obvious. *Merck & Co. v. Biocraft Laboratories*, 874 F.2d 804, 10 USPQ2d 1843 (Fed. Cir.), cert. denied, 493 U.S. 975 (1989).

Response to Arguments

14. Applicant's arguments, see pages 5-9, filed 10/27/2009, with respect to the rejection(s) of claim(s) 1-4 and 6-9 under 35 USC 102(b) over Hayawaka et al (US 6,689,836 B1) have been fully considered and are persuasive. Therefore, the rejection has been withdrawn. However, upon further consideration, a new ground(s) of rejection is made in view of Hayawaka et al over 35 USC 103(a).

15. Given the amendment to claims 1 and 7 requiring that there are 2 to 3 moles of caprolactone repetitive units per polycaprolactone-modified hydroxyalkyl (meth) acrylate, Applicants arguments are correct that the claimed component (A) is not

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disclosed with sufficient specificity to merit anticipation of the claims. However, there is more than enough specificity disclosed in Hayawaka et al to merit a *prima facie* case of obviousness. The only limitation of the independent claims 1 and 7 that is not disclosed with sufficient specificity to merit anticipation is the claimed number of caprolactone units in the polycaprolactone-modified hydroxyalkyl (meth) acrylate, all other limitations are met by preferred embodiments.

Contact Information

Any inquiry concerning this communication or earlier communications from the examiner should be directed to MIKE DOLLINGER whose telephone number is (571)270-5464. The examiner can normally be reached on M-F 9-5:30.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Randy Gulakowski can be reached on 571-272-1302. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

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Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/mmd/

/Randy Gulakowski/
Supervisory Patent Examiner, Art Unit 1796